

AD-A156 899

ENVIRONMENTAL IMPACT RESEARCH PROGRAM STATUS AND SOURCE 1/1
OF HABITAT MODELS. (U) ARMY ENGINEER WATERWAYS
EXPERIMENT STATION VICKSBURG MS ENVIR.

UNCLASSIFIED

T H ROBERTS ET AL. APR 85 WES/MP/EL-85-1

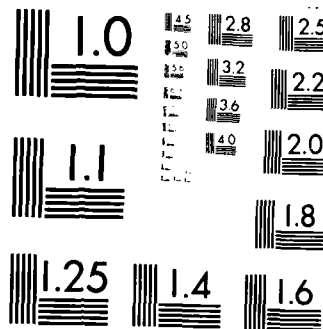
F/G 6/6

NL

END

FILED

850



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

AD-A156 899



US Army Corps
of Engineers

DTIC FILE COPY



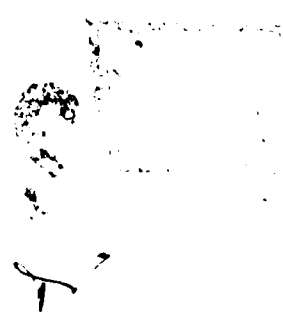
ENVIRONMENTAL IMPACT
RESEARCH PROGRAM

MILITARY AND CIVILIAN AFFECTED AREAS

STATUS AND SOURCE OF HABITAT
MODELS AND LITERATURE REVIEWS
December 1984

Thomas H. Roberts, Jr., Jean O'Neil, William E. Jabour
Environmental Laboratory

DEPARTMENT OF THE ARMY
Waterways Experiment Station, Corps of Engineers
PO Box 617
Vicksburg, Mississippi 39180-0617



This report was not computerized. Do not return
it to the computer.

The findings of this report are not to be distributed as official
Department of the Army reports. They are to be distributed
only to the authorized personnel.

The findings of this report are not to be distributed
as official reports. They are to be distributed
only to the authorized personnel. They are to be distributed
only to the authorized personnel. They are to be distributed
only to the authorized personnel.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Miscellaneous Paper EL-85-1	2. GOVT ACCESSION NO. AD-A156879	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) STATUS AND SOURCE OF HABITAT MODELS AND LITERATURE REVIEWS, December 1984		5. TYPE OF REPORT & PERIOD COVERED Final report
7. AUTHOR(s) Thomas H. Roberts, L. Jean O'Neil, William E. Jabour		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Engineer Waterways Experiment Station Environmental Laboratory PO Box 631, Vicksburg, Mississippi 39180-0631		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS DEPARTMENT OF THE ARMY US Army Corps of Engineers Washington, DC 20314-1000		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Environmental Impact Research Program, Work Unit 31729
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE April 1985
		13. NUMBER OF PAGES 14
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Available from National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Wildlife research (LC) Species (LC) Habitat (Ecology) (LC) Literature and science (LC) Animals--Habitation--Book reviews (LC) State of the art studies (WES)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the status and availability of selected species habitat models and other habitat-related documents developed by the US Fish and Wildlife Service and other agencies. This listing is not comprehensive since many universities and other organizations are now involved with model develop- ment and testing. Animal groups included are birds, mammals, amphibians, rep- tiles, fish, molluscs, and other crustaceans. Information listed includes scientific name, special status of the species (if any), the organization (Continued)		

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

20. ABSTRACT (Continued).

responsible for the development of the model or literature review, the stage of development of the document, and whether the document has received outside review or testing.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

Preface

The work reported herein was performed under the Environmental Impact Research Program (EIRP), Work Unit 31729, sponsored by the Office, Chief of Engineers (OCE), US Army. Technical Monitors were Dr. John Bushman and Mr. Earl Eiker, OCE, and Mr. Dave Mathis, Water Resources Support Center.

This report outlines the availability of species habitat models and other habitat-related information. The status and sources of these documents are also noted.

This report was prepared by Dr. Thomas H. Roberts, Ms. L. Jean O'Neil, and Mr. William E. Jabour. Dr. James S. Wakeley computerized the information and assisted with the preparation of final drafts. Reviews were provided by Mr. Chester O. Martin, Team Leader, Wildlife Resources Team, Environmental Laboratory (EL), and Mr. James W. Teafor, EL. The work was performed under the supervision of Dr. Hanley K. Smith, Chief, Wetlands and Terrestrial Habitat Group; Dr. Conrad J. Kirby, Chief, Environmental Resources Division; and Dr. John Harrison, Chief, EL. Dr. Roger T. Saucier was Program Manager, EIRP.

COL Tilford C. Creel, CE, and COL Robert C. Lee, CE, were Commanders and Directors of WES during preparation of this report. Mr. F. R. Brown was Technical Director.

This report should be cited as follows:

Roberts, T. H., O'Neil, L. J., and Jabour, W. E. 1985. "Status and Source of Habitat Models and Literature Reviews, December 1984," Miscellaneous Paper EL-85-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Contents

	<u>Page</u>
Preface	1
Introduction	3
Sources of Information	3
Tables 1-7	

STATUS AND SOURCE OF HABITAT MODELS AND LITERATURE REVIEWS

December 1984

Introduction

1. Development of species habitat models and literature reviews describing habitat requirements of wildlife and fish species has accelerated during recent years. To provide assistance in locating these materials, Tables 1-6 were compiled to identify species or groups of species for which models or other habitat-related information is available or currently under development.

2. Most of the models are Habitat Suitability Index (HSI) models that were developed for use in the US Fish and Wildlife Service (FWS) Habitat Evaluation Procedures (HEP). The literature reviews are derived from a variety of sources; reviews contained in HSI models are not listed separately. Literature reviews are included in this compilation since they serve as a base for model building.

3. Although many of the models or literature reviews have not been published, material still in draft form may be obtained for perusal or use. Models for species not listed may be available from the US Forest Service within their Wildlife and Fish Habitat Relationships System. To determine the availability of a given document, potential users should contact the appropriate agency and individual listed in Table 7.

Sources of Information

4. Sources of information for development of Tables 2-6 were the US Army Engineer Waterways Experiment Station, the FWS HEP Groups of the Western Energy and Land Use Team and the National Coastal Ecosystems Team, the US Forest Service, and the FWS Western Alaska Ecological Services. Tables 2-6 will be maintained on a microcomputer at the Waterways Experiment Station.

Table 1
Status and Source of Habitat Models and Literature
Reviews, December 1984

The following tabulation is keyed to the entries in Tables 2-6.

* Entries under the column headed "Special Status" are defined as follows:

P - Endangered or threatened, and protected by the Endangered Species Act of 1973

S - National Species of Special Emphasis (FWS), Federal Register, Vol 48, p 237

B - Blue List (Audubon Society), American Birds, 1982, Vol 36, No. 2

Note: If a species has special status in any part of its range in the United States, it is so noted.

** Entries under the columns "Literature Review Agency," "Modeling Agency," and "Testing Agency" are defined as follows:

AFG - Alaska Department of Fish and Game

AFW - Alaska offices, US Fish and Wildlife Service

FS - US Forest Service

NCT - National Coastal Ecosystems Team, US Fish and Wildlife Service

NRP - National Reservoir Research Program, US Fish and Wildlife Service

WES - Waterways Experiment Station, US Army Corps of Engineers

WLT - Western Energy and Land Use Team, US Fish and Wildlife Service

† Entries under the columns "Literature Review Status" and "Model Status" are defined as follows:

P - Preliminary

I - Intermediate

C - Complete

CP - Complete and published

†† Entries under the column "External Review" are defined as follows:

(X) - Reviewed by person(s) other than model developers, generally species authorities

(-) - Not reviewed externally

Table 2

List of HSI Models and Literature Reviews for Birds

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL TESTING REVIEW AGENCY
American avocet	<i>Recurvirostra americana</i>	-	-	-	WLT	I	X
American black duck	<i>Anas rubripes</i>	S	-	-	NCT	CP	X
American kestrel	<i>Falco sparverius</i>	-	-	-	WLT	I	X
American osprey	<i>Anas americana</i>	-	-	-	AFW	CP	-
American woodcock	<i>Scolopax minor</i>	S	-	-	WLT	P	-
Baird's sparrow	<i>Ammodramus bairdii</i>	-	-	-	WLT	CP	X
Bald eagle	<i>Haliaeetus leucocephalus</i>	P, S	-	-	AFW	CP	-
Barred owl	<i>Strix varia</i>	-	-	-	WLT	P	-
Belted kingfisher	<i>Ceryle alcyon</i>	-	-	-	WLT	P	X
Black brant	<i>Branta bernicla</i>	S	-	-	WLT	CP	X
Black-capped chickadee	<i>Parus atricapillus</i>	-	-	-	WLT	CP	X
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	-	-	-	WLT	I	X
Black-shouldered kite	<i>Elanus caeruleus</i>	-	-	-	NCT	P	X
Blue grouse	<i>Dendragapus obscurus</i>	-	-	-	WLT, AFW	CP, C	X, -
Blue-winged teal	<i>Anas discors</i>	-	-	-	WLT	I	X
Brewer's sparrow	<i>Spizella breweri</i>	-	-	-	WLT	CP	X
Broad-winged hawk	<i>Buteo platypterus</i>	-	-	-	WLT	P	-
Brown pelican	<i>Pelecanus occidentalis</i>	P, S	-	-	NCT	P	-
Bufflehead	<i>Bucephala albeola</i>	-	-	-	AFW	CP	-
Canada goose	<i>Branta canadensis</i>	S	AFW	CP	-	-	-
Canvasback	<i>Aythya valisineria</i>	-	-	-	WLT	I	X
Carolina chickadee	<i>Parus carolinensis</i>	-	-	-	WLT	P	X
Clapper rail	<i>Rallus longirostris</i>	P, S	-	-	NCT	CP	X
Common snipe	<i>Carduelis flammea</i>	-	-	-	AFW	CP	X
Common redpoll	<i>Gallinago gallinago</i>	-	-	-	AFW	CP	-
Cooper's hawk	<i>Accipiter cooperii</i>	-	-	-	WLT	P	-
Double-crested cormorant	<i>Phalacrocorax auritus</i>	-	-	-	WLT	P	-
Downy woodpecker	<i>Picoides pubescens</i>	-	-	-	WLT	CP	X
Eastern bluebird	<i>Sialia sialis</i>	B	-	-	FS	C	-
Eastern meadowlark	<i>Sturnella magna</i>	B	-	-	WLT	CP	X
Ferruginous hawk	<i>Buteo regalis</i>	-	-	-	WLT	CP	X
Field sparrow	<i>Spizella pusilla</i>	-	-	-	WLT	CP	X
Gadwall	<i>Anas strepera</i>	-	-	-	WLT	I	X
Gray partridge	<i>Perdix perdix</i>	-	-	-	WLT	I	X
Great blue heron	<i>Ardea herodias</i>	-	WLT	P	-	-	-
Great egret	<i>Casmerodius albus</i>	-	-	-	NCT	CP	X
Great horned owl	<i>Bubo virginianus</i>	-	-	-	WLT	P	-
Greater prairie chicken	<i>Tympanicus cupido</i>	P	-	-	WLT	P	-
Greater white-fronted goose (winter)	<i>Anser albifrons</i>	S	-	-	NCT	I	-
Green-backed heron	<i>Butorides striatus</i>	-	-	-	WLT	P	-

(Continued)

(Sheet 1 of 3)

Table 2 (Continued)

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL REVIEW	TESTING AGENCY
Green-winged teal	Anas crecca	-	-	-	AFW	CP	X	AFW
Gyr falcon	Falco rusticolus	-	AFW	CP	-	-	-	-
Hairy woodpecker	Picoides villosus	B	-	-	WLT	I	X	WES
Indigo bunting	Passerina cyanea	-	-	-	WLT	I	-	WES
Lapland longspur	Calcarius lapponicus	-	-	-	AFW	CP	-	-
Laughing gull	Larus atricilla	-	-	-	NCT	P	-	-
Least tern	Sterna antillarum	P,S,B	-	-	WLT,NCT	I,P	X,-	-
Lesser scaup (winter)	Aythya affinis	-	-	-	NCT	P	-	-
Lewis' woodpecker	Melanerpes lewis	B	-	-	WLT	CP	-	-
Marsh wren	Cistothorus palustris	-	-	-	WLT	P	-	-
Mottled duck	Anas fulvigula	-	-	-	NCT	CP	X	-
Mourning dove	Zenaidura macroura	S	-	-	WLT	P	-	-
Northern bobwhite	Colinus virginianus	-	-	-	WLT	I	X	WES
Northern flicker	Colaptes auratus	-	-	-	WLT	P	-	-
Northern goshawk	Accipiter gentilis	-	-	-	AFW	CP	-	-
Northern pintail (winter)	Accipiter gentilis	-	-	-	AFW	CP	-	-
Northern waterthrush	Anas acuta	S	-	-	NCT	P	X	-
Osprey	Seiurus noveboracensis	-	-	-	WLT	P	-	-
Peregrine falcon	Pandion haliaetus	S	WES	P	-	-	-	-
Pileated woodpecker	Falco peregrinus	P,S	AFW	CP	-	-	-	-
Pine warbler	Dryocopus pileatus	-	-	-	WLT,FS	CP,C	X,-	FS
Prairie falcon	Dendroica pinus	-	-	-	WLT,FS	CP,C	X,-	WES,FS
Prairie warbler	Falco mexicanus	-	-	-	WLT	I	X	WLT
Red-cockaded woodpecker	Dendroica discolor	P,S	-	-	FS	C	-	FS
Red-tailed hawk	Picoides borealis	-	FS	CP	-	C	X	FS
Red-winged blackbird	Buteo jamaicensis	-	-	-	WLT	P	X	-
Redhead (winter)	Agelaius phoeniceus	-	-	-	WLT	P	-	-
Ring-necked pheasant	Aythya americana	S	-	-	NCT	CP	X	-
Roseate spoonbill	Phasianus colchicus	-	-	-	WLT	P	-	-
Ruffed grouse	Ajaia ajaja	-	-	-	NCT	CP	X	-
Sage grouse	Bonasa umbellus	-	WES	I	WLT	I	X	WLT
Sandhill crane	Centrocercus urophasianus	-	-	-	WLT	P	-	-
Scissor-tailed flycatcher	Grus canadensis	P,S	-	-	WLT,AFW	P,CP	-,-	-
Sharp-tailed grouse	Tyrannus forficatus	-	-	-	WLT	I	X	-
Snow goose (lesser) (winter)	Tympanuchus phasianellus	-	-	-	WLT	I	X	-
Snowy plover	Chen caerulescens	S	-	-	NCT	I	-	-
Spotted owl	Charadrius alexandrinus	B	WES	I	-	-	-	-
Spruce grouse	Strix occidentalis	S,B	-	-	WLT,FS	P,C	-,-	FS
Trumpeter swan	Dendragapus canadensis	-	-	-	AFW	CP	X	AFW
Veery	Cygnus buccinator	S	-	-	AFW	CP	-	-
	Catharus fuscescens	-	-	-	WLT	CP	X	-

(Continued)

(Sheet 2 of 3)

Table 2 (Continued)

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL TESTING REVIEW	EXTERNAL TESTING AGENCY
Western bluebird	Sialia mexicana	-	WLT	C	WLT	P	-	-
Western grebe	Aechmophorus occidentalis	B	-	-	WLT	CP	X	-
White ibis	Eudocimus albus	-	-	-	NCT	P	-	-
White-breasted nuthatch	Sitta carolinensis	-	-	-	WLT	P	-	-
Wild turkey	Meleagris gallopavo	-	-	-	WLT	P	-	-
Williamson's sapsucker	Sphyrapicus thyroideus	-	-	-	WLT	CP	X	-
Willow ptarmigan	Lagopus lagopus	-	-	-	AFW	CP	-	-
Wood duck	Aix sponsa	S	-	-	WLT/WES	CP	X	-
Wood thrush	Hylocichla mustelina	-	-	-	WLT	P	-	-
Yellow warbler	Dendroica petechia	B	-	-	WLT	CP	X	-
Yellow-headed blackbird	Xanthocephalus xanthocephalus	-	-	-	WLT	CP	X	-

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL REVIEW	TESTING AGENCY
Arctic fox	Alopex lagopus	-	-	-	AFW	CP	-	-
Beaver	Castor canadensis	-	WES	P	WLT, AFW	CP, CP	X, -	AFW
Black bear	Ursus americanus	-	-	-	AFW	C	-	-
Black-tailed deer	Odocoileus hemionus siskimensis	-	-	-	AFW	CP	-	-
Caribou	Rangifer tarandus	-	-	-	AFW	CP	X	AFW
Cotton rat	Sigmodon hispidus	-	-	-	FS	C	-	-
Dall sheep	Ovis dalli	-	-	-	AFW	CP	-	-
Eastern cottontail	Sylvilagus floridanus	-	WES	I	WLT, FS	CP, C	X, -	-
Eastern woodrat	Neotoma floridana	-	WLT	C	-	-	-	-
Fisher	Martes pennanti	-	-	-	WLT	CP	X	-
Fox squirrel	Sciurus niger	-	-	-	WLT	CP	X	-
Gray squirrel	Sciurus carolinensis	-	WES	I	WLT	CP	X	WES
Gray wolf	Canis lupus	P, S	-	-	AFW	CP	-	-
Grizzly/brown bear	Ursus arctos	P, S	-	-	AFW	CP	-	-
Kit fox	Vulpes macrotis	P	-	-	WLT	P	-	-
Marsh rabbit	Sylvilagus palustris	-	-	-	FS	C	-	-
Meadow vole	Microtus pennsylvanicus	-	WLT	C	-	-	-	-
Mink	Mustela vison	-	-	-	WLT, AFW	CP, CP	X, X	AFW
Moose	Alces alces	-	-	-	WLT, AFW	P, CP	-, X	AFW
Mountain goat	Oreamnos americanus	-	-	-	AFW	C	-	-
Mule deer	Odocoileus hemionus	-	-	-	WLT	I	X	WLT
Muskrat	Ondatra zibethicus	-	WES	P	WLT, NCT	CP, C	X, X	NCT
Pine marten	Martes americana	-	-	-	WLT, FS, AFW	CP, C, CP	X, -	FS
Pronghorn	Antilocapra americana	-	-	-	WLT	CP	X	WLT
Raccoon	Procyon lotor	-	-	-	WLT	P	-	-
Red squirrel	Tamiasciurus hudsonicus	-	-	-	WLT, AFW	I, CP	-	-
River otter	Lutra canadensis	-	-	-	AFW	CP	-	-
Snowshoe hare	Lepus americanus	-	-	-	WLT, AFW	P, CP	-	-
Southern flying squirrel	Glaucomys volans	-	-	-	WLT	P	-	-
Southern red-backed vole	Clethrionomys gapperi	-	-	-	WLT	CP	X	-
White-footed mouse	Peromyscus leucopus	-	WLT	C	-	-	-	-
White-tailed deer	Odocoileus virginianus	-	-	-	WLT/WES	I	X	WES
Yellow-cheeked vole	Microtus xanthognathus	-	-	-	AFW	CP	-	-

Table 4

List of HSL Models and Literature Reviews for Reptiles and Amphibians

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL TESTING REVIEW	EXTERNAL TESTING AGENCY
American alligator	Alligator mississippiensis	S	-	-	NCT	P	-	-
Bullfrog	Rana catesbeiana	-	-	-	WLT	P	-	-
Diamondback terrapin	Malaclemys terrapin	-	-	-	NCT	P	-	-
Eastern box turtle	Terrapene carolina	-	-	-	WLT	P	-	-
Red-spotted newt	Notophthalmus viridescens	-	-	-	WLT	I	X	WLT
Snapping turtle	Chelydra serpentina	-	-	-	WLT	P	-	-
Wood frog	Rana sylvatica	-	-	-	WLT	P	-	-
Yellow-bellied racer	Coluber constrictor	-	-	-	WLT	P	-	-

Table 5

List of HSI Models and Literature Reviews for Fishes

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL REVIEW	TESTING AGENCY
Alewife	<i>Alosa pseudoharengus</i>	-	NCT/WES	CP	NCT	CP	X	-
All catfish		-	-	-	NRP	C	-	-
All fish		-	-	-	NRP	C	-	-
All minnows		-	-	-	NRP	C	-	-
All sunfish		-	-	-	NRP	C	-	-
All trout		-	-	-	NRP	C	-	-
American eel	<i>Anguilla rostrata</i>	-	NCT/WES	CP	-	-	-	-
American shad	<i>Alosa sapidissima</i>	-	NCT/WES	I	NCT	I	X	-
Angler harvest		-	-	-	WLT	CP	-	-
Arctic grayling	<i>Thymallus arcticus</i>	-	AFG	CP	WLT	P	X	-
Atlantic croaker	<i>Micropogon undulatus</i>	-	NCT/WES	CP	NCT	CP	X	-
Atlantic herring	<i>Clupea harengus</i>	-	NCT/WES	C	-	-	-	-
Atlantic menhaden	<i>Brevoortia tyrannus</i>	-	NCT/WES	CP	-	-	-	-
Atlantic salmon	<i>Salmo salar</i>	S	NCT/WES	CP	WLT	C	X	WLT
Atlantic silversides	<i>Menidia menidia</i>	-	NCT/WES	CP	-	-	-	-
Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	-	NCT/WES	CP	-	-	-	-
Bay anchovy	<i>Anchoa mitchilli</i>	-	NCT/WES	CP	-	-	-	-
Bigmouth buffalo	<i>Ichtiobus cyprinellus</i>	-	-	-	WLT	CP	X	-
Black bullhead	<i>Ictalurus melas</i>	-	-	-	WLT	CP	X	WLT
Black crappie	<i>Pomoxis nigromaculatus</i>	-	-	-	WLT	CP	X	WLT
Black drum	<i>Pogonias cromis</i>	-	NCT/WES	I	WLT, WLT, NRP	CP, CP, C	X, -, -	WLT
Blacknose dace	<i>Rhinichthys atratulus</i>	-	-	-	WLT	-	-	-
Blueback herring	<i>Alosa aestivalis</i>	-	NCT/WES	CP	NCT	CP	X	WLT
Bluefish	<i>Pomatomus saltatrix</i>	-	NCT/WES	C	-	-	-	-
Bluegill	<i>Lepomis macrochirus</i>	-	-	-	WLT, NRP	CP, C	X, -	WLT, WES
Broad whitefish	<i>Coregonus nasus</i>	-	AFG	CP	-	-	-	-
Brook trout	<i>Salvelinus fontinalis</i>	-	-	-	WLT, NRP	CP, C	X, -	WLT
Brown trout	<i>Salmo trutta</i>	-	NCT/WES	C	WLT	CP	X	-
California grunion	<i>Leuresthes tenuis</i>	-	NCT/WES	C	-	-	-	-
California halibut	<i>Paralichthys californicus</i>	-	NCT/WES	I	-	-	-	-
Carp	<i>Cyprinus carpio</i>	-	-	-	WLT, WLT, NRP	CP, CP, C	X, -, -	WLT
Catostomids		-	-	-	NRP	C	-	-
Channel catfish	<i>Ictalurus punctatus</i>	-	-	-	WLT	CP	X	WLT
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	S	NCT/WES	CP	-	-	-	-
Chum salmon	<i>Oncorhynchus keta</i>	-	AFG, NCT	CP, P	WLT, NCT, AFG	P, P, P	-, -, -	-
Clupeids		-	-	-	NRP	C	-	-
Coho salmon	<i>Oncorhynchus kisutch</i>	S	NCT/WES	I	WLT, NRP	CP, C	X, -	WLT
Common shiner	<i>Notropis cornutus</i>	-	-	-	WLT	CP	X	WLT
Creek chub	<i>Semotilus atromaculatus</i>	-	-	-	WLT	CP	X	-
Cutthroat trout	<i>Salmo clarki</i>	S	-	-	WLT, NRP	CP, C	X, -	WLT

(Continued)

(Sheet 1 of 3)

Table 5 (Continued)

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL REVIEW	TESTING AGENCY
Cutthroat trout (sea run)	Salmo clarki	-	NCT/WES	P	NCT	P	-	-
Dolly varden	Salvelinus malma	-	AFG	CP	-	-	-	-
Fallfish	Semotilus corporalis	-	-	-	WLT	CP	X	WLT
Florida pompano	Trachinotus carolinus	-	NCT/WES	I	-	-	-	-
Freshwater drum	Aplodinotus grunniens	-	-	-	NRP	C	-	-
Gafftopsail catfish	Bagre marinus	-	NCT/WES	CP	-	-	-	-
Gizzard shad	Dorosoma cepedianum	-	-	-	WLT	P	-	-
Gray snapper	Lutjanus griseus	-	NCT/WES	I	-	-	-	-
Green sunfish	Lepomis cyanellus	-	-	-	WLT	CP	X	WLT
Groupers	Lepomis spp.	-	NCT/WES	P	-	-	-	-
Gulf flounder	Paralichthys albigutta	-	-	-	NCT	I	-	-
Gulf menhaden	Brevoortia patronus	-	NCT/WES	CP	NCT	CP	X	-
Inland silversides	Menidia beryllina	-	-	-	NCT	P	-	-
King mackerel	Scomberomorus cavalla	-	NCT/WES	I	-	-	-	-
Kokanee	Oncorhynchus nerka kennerlyi	-	-	-	NRP	C	-	-
Lake trout	Salvelinus namaycush	S	WLT	C	NRP, WLT	C, CP	-	-
Lane snapper	Lutjanus synagris	-	NCT/WES	I	-	-	-	-
Largemouth bass	Micropterus salmoides	-	-	-	WLT, NRP	CP, C	X, -	WLT, WES
Longnose dace	Rhinichthys cataractae	-	-	-	WLT	CP	X	-
Longnose sucker	Catostomus catostomus	-	-	-	WLT	CP	X	-
Lost river sucker	Catostomus luxatus	-	FS	C	FS	C	-	-
Modoc sucker	Catostomus micropterus	-	FS	C	FS	C	-	-
Mojave chub	Gila mohavensis	P	FS	C	NRP	C	-	-
Muskellunge	Esox masquinongy	-	-	-	-	-	-	-
Mutton snapper	Lutjanus analis	-	NCT/WES	I	-	-	-	-
Northern anchovy	Engraulis mordax	-	NCT/WES	I	-	-	-	-
Northern hog sucker	Hypentelium nigricans	-	-	-	WLT	P	-	-
Northern pike	Esox lucius	-	-	-	WLT, NRP	CP, C	X, -	WLT
Pacific lamprey	Entosphenus tridentatus	-	FS	I	FS	I	-	-
Paddlefish	Polyodon spathula	-	-	-	WLT	CP	X	-
Pinkfish	Lagodon rhomboides	-	NCT/WES	C	-	-	-	-
Pink salmon	Oncorhynchus gorbuscha	-	AFG, NCT	CP, P	AFG	P	-	-
Rainbow smelt	Osmorus mordax	-	NCT/WES	I	-	-	-	-
Rainbow trout	Salmo gairdneri	-	-	-	WLT, WLT	CP, P	X, -	WLT
Red drum	Sciaenops ocellata	-	NCT/WES	C	NCT	CP	X	-
Red-ear sunfish	Lepomis microlophus	-	-	-	WLT	CP	X	-
Rock bass	Ambloplites rupestris	-	WLT	C	WLT	P	-	-
Rough sculpin	Cottus asperimus	-	FS	C	FS	C	-	-
Round whitefish	Prosopium cylindraceum	-	AFG	CP	-	-	-	-
Sea catfish	Arius felis	-	NCT/WES	CP	-	-	-	-

(Continued)

(Sheet 2 of 3)

Table 5 (Concluded)

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL TESTING REVIEW	EXTERNAL TESTING AGENCY
Sheepshead	Archosargus probatocephalus	-	NCT/WES	C	-	-	-	-
Slough darter	Etheostoma gracile	-	-	-	WLT	CP	X	-
Smallmouth bass	Micropterus dolomieu	-	-	-	WLT, NRP	CP, C	X, -	-
Smallmouth buffalo	Ictiobus bubalus	-	-	-	WLT	CP	X	-
Snook	Centropomus undecimalis	-	NCT/WES	CP	-	-	-	-
Southern flounder	Paralichthys lethostigma	-	NCT/WES	C	NCT	I	-	-
Southern kingfish	Menticirrhus americanus	-	-	-	NCT	CP	X	-
Spanish mackerel	Scomberomorus maculatus	-	NCT/WES	I	-	-	-	-
Sportfish	-	-	-	-	NRP	C	-	-
Spot	Leiostomus xanthurus	-	NCT/WES	P	NCT	CP	X	-
Spotted bass	Micropterus punctulatus	-	-	-	WLT, NRP	CP, C	X, -	WLT
Spotted sea trout	Cynoscion nebulosus	-	NCT/WES	C	NCT	CP	X	-
Steelhead	Salmo gairdneri	S	NCT/WES	I	-	-	-	-
Striped anchovy	Anchoa hepsetus	-	NCT/WES	CP	-	-	-	-
Striped bass (coastal)	Morone saxatilis	S	NCT/WES	CP	NCT	CP	X	-
Striped bass (inland)	Morone saxatilis	S	-	-	WLT	CP	-	-
Striped killifish	Fundulus majalis	-	NCT/WES	P	-	-	-	-
Striped mullet	Mugil cephalus	-	NCT/WES	C	-	-	-	-
Summer flounder	Paralichthys dentatus	-	NCT/WES	CP	-	-	-	-
Three-spined stickleback	Gasterosteus aculeatus	-	AFG	CP	AFG	P	X	-
Walleye	Stizostedion vitreum	-	-	-	WLT, NRP(3)	CP, C, C, P	X, -, -, -	-
Warmouth sunfish	Lepomis gulosus	-	-	-	WLT	CP	X	WLT
White bass	Morone chrysops	-	WLT	C	WLT, NRP	C, P	X, -	-
White crappie	Pomoxis annularis	-	-	-	WLT, NRP	CP, C	X, -	WLT, WES
White mullet	Mugil curema	-	NCT/WES	C	-	-	-	-
White perch	Morone americana	-	NCT/WES	CP	-	-	-	-
White sucker	Catostomus commersoni	-	-	-	WLT, WLT	CP, P	-X	-
Winter flounder	Pseudopleuronectes americanus	-	NCT/WES	I	-	-	-	-
Yellow perch	Perca flavescens	-	-	-	WLT, WLT, NRP	CP, P, C	-X, -	-
Yellow-tailed snapper	Ocyurus chrysurus	-	NCT/WES	I	-	-	-	-

Table 6

Fig. 1. Biol. Models and Literature Reviews for Molluscs and Crustaceans

COMMON NAME	SCIENTIFIC NAME	SPECIAL STATUS	LIT. REV. AGENCY	LIT. REV. STATUS	MODELING AGENCY	MODEL STATUS	EXTERNAL TESTING REVIEW	EXTERNAL TESTING AGENCY
Abalone	Haliotis spp.	-	NCT/WES	C	-	-	-	-
American lobster	Homarus americanus	-	NCT/WES	C	-	-	-	-
American oyster	Crassostrea virginica	-	NCT/WES	CP	NCT	CP	X	NCT
Amphipods	Amphipoda	-	NCT/WES	I	-	-	-	-
Bay scallop	Aequipecten irradians	-	NCT/WES	CP	-	-	-	-
Blue crab	Callinectes sapidus	-	NCT/WES	CP	-	-	-	-
Blue mussel	Mytilus edulis	-	NCT/WES	P	NCT	P	-	-
Brown shrimp	Penaeus aztecus	-	NCT/WES	CP	NCT	CP	X	-
Common rangia	Rangia cuneata	-	NCT/WES	C	-	-	-	-
Dungeness crab	Cancer magister	-	NCT/WES	I	NCT	P	-	-
Grass shrimp	Palaemonetes spp.	-	NCT/WES	I	-	-	-	-
Hard clam	Mercenaria mercenaria	-	NCT/WES	CP	NCT	CP	X	-
Littleneck clam	Protothaca staminea	-	NCT/WES	I	NCT	CP	X	-
Pink shrimp	Penaeus duorarum	-	NCT/WES	CP	NCT	CP	-	-
Red swamp crayfish	Procambarus clarkii	-	WLT	C	-	-	-	-
Sea scallop	Placopecten magellanicus	-	NCT/WES	I	-	-	-	-
Soft shell clam	Mya arenaria	-	NCT/WES	I	-	-	-	-
Spiny lobster	Panulirus argus	-	NCT/WES	I	-	-	-	-
Stone crab	Menippe mercenaria	-	NCT/WES	CP	-	-	-	-
Surf clam	Spisula solidissima	-	NCT/WES	CP	-	-	-	-
White shrimp	Penaeus setiferus	-	NCT/WES	C	NCT	CP	X	-

Table 7
Contacts for Information Concerning Habitat Models and
Literature Reviews

<u>WES</u>	<u>AFG</u>
US Army Corps of Engineers Waterways Experiment Station/WESER PO Box 631 Vicksburg, MS 39180-0631	Alaska Department of Fish and Game Juneau, AK 99801
L. Jean O'Neil (Model testing) (601) 634-3641 FTS 542-3641	Contact Jon Nickles (AFW) for AFG documents
Chester O. Martin (Literature reviews) (601) 634-3958 FTS 542-3958	<u>WLT</u> US Fish and Wildlife Service Western Energy and Land Use Team HEP Group One Creekside Building 2627 Redwing Road Fort Collins, CO 80526
<u>FS</u> US Forest Service Wildlife and Fish Ecology Unit 3825 East Mulberry Fort Collins, CO 80524	Mel Schamberger (303) 226-9424 FTS 323-5424
Hal Salwasser (303) 493-0904 FTS 323-1472	<u>NRP</u> US Fish and Wildlife Service National Reservoir Research Program Fayetteville, AR 72701
<u>NCT</u> US Fish and Wildlife Service National Coastal Ecosystems Team Coastal/Estuarine HEP Group NASA/Slidell Computer Complex 1010 Gause Boulevard Slidell, LA 70458	Contact Mel Schamberger (WLT) for NRP documents.
Carroll L. Cordes (540) 255-6511 FTS 685-6511	
<u>AFW</u> Supervisor, Special Services US Fish and Wildlife Service 1011 East Tudor Anchorage, AK 99503	
Jon Nickles (907) 786-3492	

END

FILMED

8-85

DTIC